



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 7, 2020 – 10:47 PM BST

PDB ID : 5GS0
Title : Crystal structure of the complex of TLR3 and bi-specific diabody
Authors : Kim, J.H.; Song, D.H.; Youn, S.J.; Kim, J.W.; Cho, G.; Lee, H.; Lee, J.O.
Deposited on : 2016-08-13
Resolution : 3.27 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.13.1
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.13.1

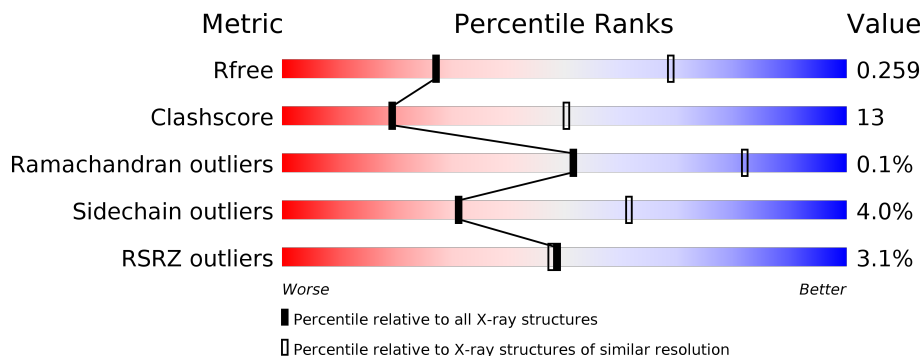
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.27 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1177 (3.32-3.24)
Clashscore	141614	1044 (3.30-3.26)
Ramachandran outliers	138981	1026 (3.30-3.26)
Sidechain outliers	138945	1025 (3.30-3.26)
RSRZ outliers	127900	1141 (3.32-3.24)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	671	<div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 70%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 27%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">70% 27% ..</p>
1	B	671	<div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 74%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 23%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">74% 23% ..</p>
2	C	107	<div style="display: flex; align-items: center;"> <div style="width: 67%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 30%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">67% 30% .</p>
2	E	107	<div style="display: flex; align-items: center;"> <div style="width: 73%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 21%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">73% 21% 5% .</p>
3	D	127	<div style="display: flex; align-items: center;"> <div style="width: 67%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 27%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">67% 27% . .</p>
3	F	127	<div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 64%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 30%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">2% 64% 30% . .</p>

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Mol	Chain	Length	Quality of chain
4	H	121	
4	X	121	
5	L	107	
5	Y	107	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
6	NAG	A	804	-	-	-	X
6	NAG	A	805	-	-	-	X
6	NAG	A	813	-	-	-	X
6	NAG	B	705	-	-	-	X
6	NAG	B	706	-	-	-	X
6	NAG	B	719	-	-	-	X
7	BMA	A	819	-	-	-	X
7	BMA	B	720	-	-	-	X
8	MAN	A	820	-	-	-	X
8	MAN	B	701	-	-	-	X

2 Entry composition [i](#)

There are 8 unique types of molecules in this entry. The entry contains 18219 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Toll-like receptor 3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	663	5323	3407	903	996	17	0	0	0
1	B	663	5323	3407	903	996	17	0	0	0

- Molecule 2 is a protein called light chain (anti-TLR3).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	C	107	809	504	133	170	2	0	0	0
2	E	107	809	504	133	170	2	0	0	0

- Molecule 3 is a protein called heavy chain (anti-TLR3).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	D	122	956	609	161	184	2	0	0	0
3	F	122	956	609	161	184	2	0	0	0

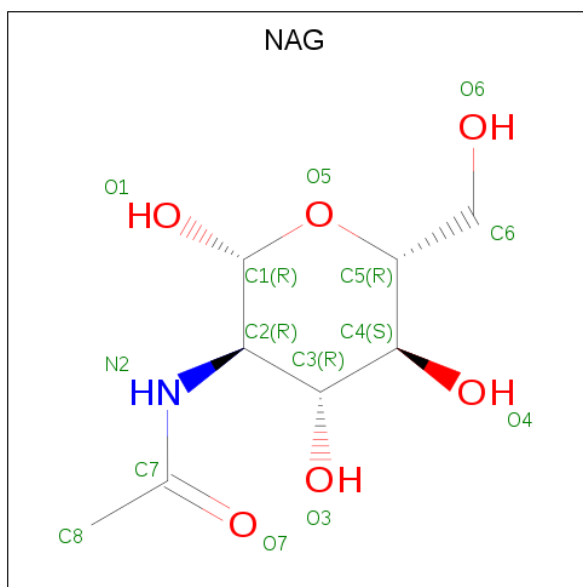
- Molecule 4 is a protein called heavy chain (anti-Lid).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	X	114	909	582	151	173	3	0	0	0
4	H	116	921	588	153	177	3	0	0	0

- Molecule 5 is a protein called light chain (anti-Lid).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	Y	107	Total 824	C 514	N 141	O 167	S 2	0	0	0
5	L	105	Total 807	C 502	N 138	O 165	S 2	0	0	0

- Molecule 6 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



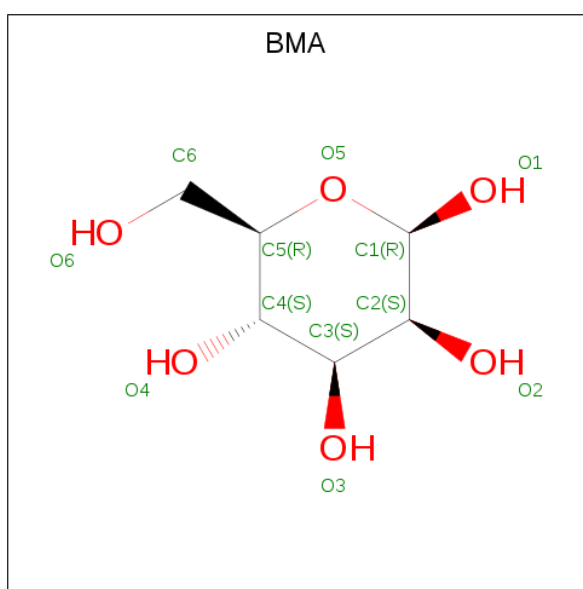
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
6	A	1	Total 15	C 8	N 1	O 6	0	0
6	A	1	Total 15	C 8	N 1	O 6	0	0
6	A	1	Total 15	C 8	N 1	O 6	0	0
6	A	1	Total 15	C 8	N 1	O 6	0	0
6	A	1	Total 15	C 8	N 1	O 6	0	0
6	A	1	Total 15	C 8	N 1	O 6	0	0
6	A	1	Total 15	C 8	N 1	O 6	0	0
6	A	1	Total 15	C 8	N 1	O 6	0	0
6	A	1	Total 15	C 8	N 1	O 6	0	0

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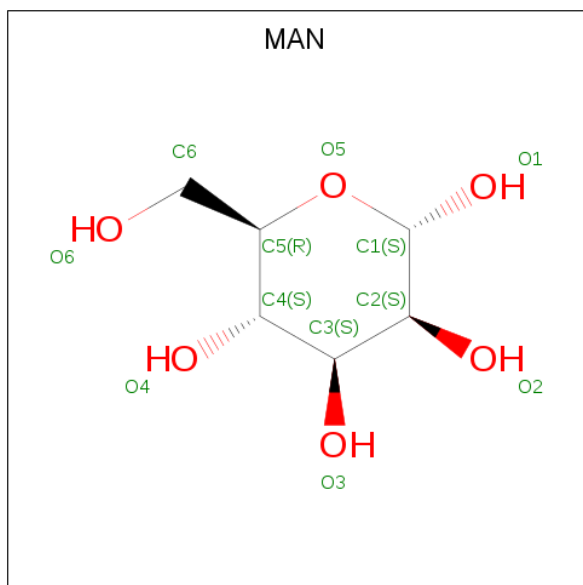
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	B	1	Total	C	N	O	0	0
			15	8	1	6		
6	B	1	Total	C	N	O	0	0
			15	8	1	6		
6	B	1	Total	C	N	O	0	0
			15	8	1	6		
6	B	1	Total	C	N	O	0	0
			15	8	1	6		

- Molecule 7 is beta-D-mannopyranose (three-letter code: BMA) (formula: C₆H₁₂O₆).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	A	1	Total	C	O	0	0
			12	6	6		
7	A	1	Total	C	O	0	0
			12	6	6		
7	B	1	Total	C	O	0	0
			12	6	6		
7	B	1	Total	C	O	0	0
			12	6	6		

- Molecule 8 is alpha-D-mannopyranose (three-letter code: MAN) (formula: C₆H₁₂O₆).

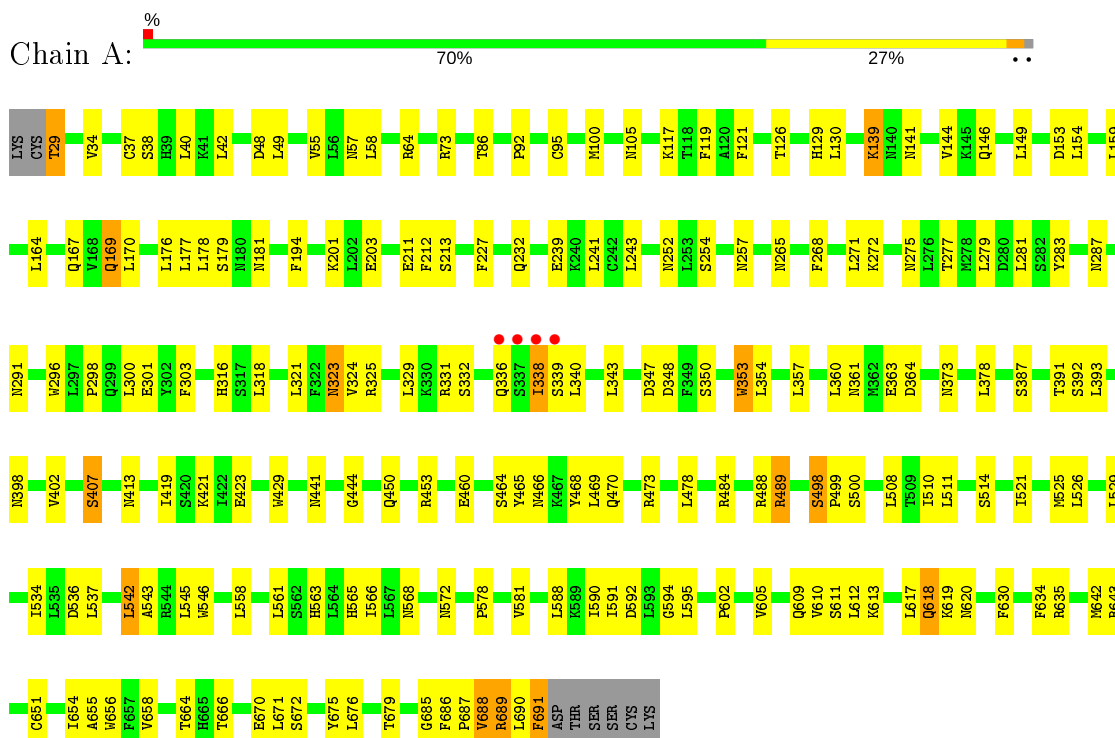


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	A	1	Total	C	O	0	0
			12	6	6		
8	B	1	Total	C	O	0	0
			12	6	6		

3 Residue-property plots

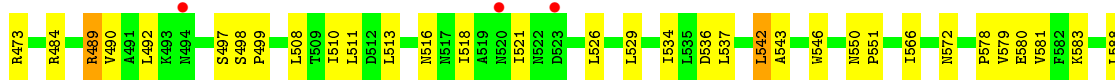
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Toll-like receptor 3

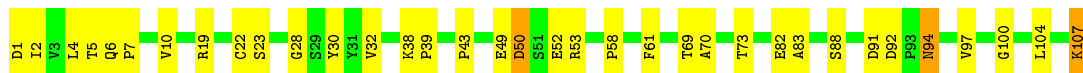


- Molecule 1: Toll-like receptor 3

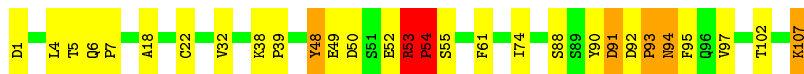




• Molecule 2: light chain (anti-TLR3)



• Molecule 2: light chain (anti-TLR3)



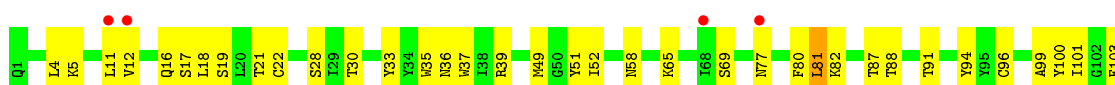
• Molecule 3: heavy chain (anti-TLR3)



• Molecule 3: heavy chain (anti-TLR3)

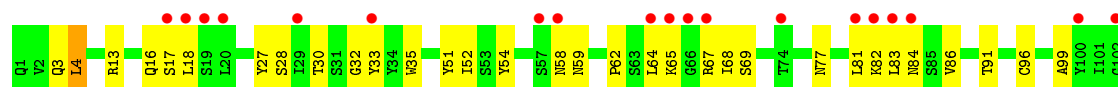


• Molecule 4: heavy chain (anti-Lid)

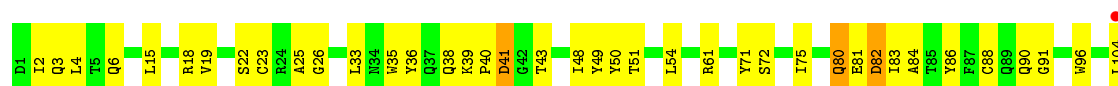




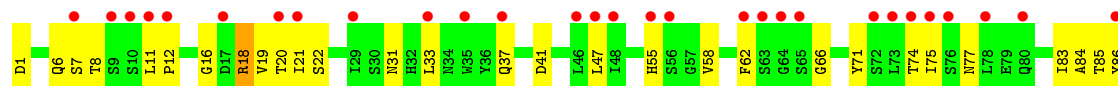
- Molecule 4: heavy chain (anti-Lid)



- Molecule 5: light chain (anti-Lid)



- Molecule 5: light chain (anti-Lid)



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	98.52Å 141.33Å 150.83Å 90.00° 106.88° 90.00°	Depositor
Resolution (Å)	35.07 – 3.27 41.16 – 3.28	Depositor EDS
% Data completeness (in resolution range)	95.7 (35.07-3.27) 92.3 (41.16-3.28)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.91 (at 3.25Å)	Xtrriage
Refinement program	PHENIX 1.10.1_2155	Depositor
R, R_{free}	0.192 , 0.248 0.208 , 0.259	Depositor DCC
R_{free} test set	2795 reflections (4.79%)	wwPDB-VP
Wilson B-factor (Å ²)	87.3	Xtrriage
Anisotropy	0.375	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.26 , 47.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	0.018 for h,-k,-h-l	Xtrriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	18219	wwPDB-VP
Average B, all atoms (Å ²)	102.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.80% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: BMA, NAG, MAN

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.52	2/5436 (0.0%)	0.72	4/7380 (0.1%)
1	B	0.50	0/5436	0.73	4/7380 (0.1%)
2	C	0.56	0/829	0.76	2/1132 (0.2%)
2	E	0.67	2/829 (0.2%)	1.34	13/1132 (1.1%)
3	D	0.54	0/981	0.73	1/1337 (0.1%)
3	F	0.44	0/981	0.70	2/1337 (0.1%)
4	H	0.42	0/946	0.68	0/1287
4	X	0.47	0/934	0.67	0/1271
5	L	0.38	0/824	0.70	2/1119 (0.2%)
5	Y	0.48	0/841	0.70	1/1141 (0.1%)
All	All	0.51	4/18037 (0.0%)	0.76	29/24516 (0.1%)

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	93	PRO	N-CD	9.73	1.61	1.47
1	A	407	SER	C-N	7.04	1.47	1.34
2	E	54	PRO	N-CD	6.39	1.56	1.47
1	A	353	TRP	CB-CG	-5.07	1.41	1.50

All (29) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	91	ASP	CB-CA-C	20.47	151.35	110.40
2	E	54	PRO	N-CA-CB	-14.08	86.40	103.30
2	E	91	ASP	N-CA-C	-10.81	81.82	111.00
2	E	53	ARG	C-N-CD	-10.30	97.93	120.60
2	E	54	PRO	N-CD-CG	-10.22	87.86	103.20
5	L	19	VAL	CB-CA-C	10.07	130.53	111.40
2	E	53	ARG	CB-CA-C	10.04	130.48	110.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	54	PRO	CB-CA-C	-8.20	91.50	112.00
2	E	55	SER	N-CA-CB	-8.10	98.35	110.50
5	L	19	VAL	N-CA-C	-7.40	91.03	111.00
2	E	54	PRO	N-CA-C	-7.22	93.32	112.10
2	E	54	PRO	CA-N-CD	-6.88	101.87	111.50
1	B	690	LEU	CA-CB-CG	6.78	130.88	115.30
3	F	65	VAL	CB-CA-C	6.43	123.63	111.40
1	A	340	LEU	N-CA-C	-6.35	93.85	111.00
2	E	49	GLU	C-N-CA	6.24	137.29	121.70
1	B	339	SER	N-CA-CB	6.11	119.66	110.50
3	F	65	VAL	N-CA-C	-6.02	94.74	111.00
2	C	49	GLU	C-N-CA	5.80	136.21	121.70
1	A	339	SER	CB-CA-C	-5.69	99.29	110.10
3	D	18	LEU	CA-CB-CG	5.64	128.27	115.30
2	C	50	ASP	CB-CG-OD1	5.54	123.29	118.30
1	A	688	VAL	CB-CA-C	-5.52	100.91	111.40
2	E	91	ASP	CB-CG-OD2	-5.48	113.37	118.30
1	B	593	LEU	CA-CB-CG	5.30	127.49	115.30
5	Y	54	LEU	CA-CB-CG	5.29	127.46	115.30
1	B	689	ARG	NE-CZ-NH1	5.24	122.92	120.30
2	E	93	PRO	N-CA-C	-5.20	98.59	112.10
1	A	338	ILE	N-CA-CB	5.11	122.56	110.80

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5323	0	5345	129	0
1	B	5323	0	5345	111	0
2	C	809	0	755	20	0
2	E	809	0	755	17	0
3	D	956	0	938	25	0
3	F	956	0	938	30	0
4	H	921	0	885	22	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	X	909	0	875	30	0
5	L	807	0	772	32	0
5	Y	824	0	796	37	0
6	A	255	0	255	18	0
6	B	255	0	255	13	0
7	A	24	0	24	2	0
7	B	24	0	24	2	0
8	A	12	0	12	0	0
8	B	12	0	12	0	0
All	All	18219	0	17986	462	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 13.

All (462) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:338:ILE:HG12	1:B:338:ILE:O	1.50	1.06
4:X:12:VAL:O	4:X:114:VAL:HG22	1.60	1.01
2:E:53:ARG:NH1	2:E:61:PHE:O	2.03	0.92
4:X:69:SER:HB3	4:X:82:LYS:HB3	1.52	0.91
4:X:28:SER:HA	4:X:77:ASN:HD21	1.36	0.90
1:A:687:PRO:HG2	1:A:690:LEU:HD13	1.54	0.89
1:B:473:ARG:HD3	1:B:499:PRO:HD2	1.55	0.88
1:B:100:MET:HG2	6:B:704:NAG:H4	1.54	0.88
1:B:338:ILE:CG1	1:B:338:ILE:O	2.20	0.87
1:B:230:ASN:HD22	1:B:257:ASN:HD22	1.20	0.86
5:L:86:TYR:HE2	5:L:104:LEU:HD11	1.39	0.86
5:Y:19:VAL:HG11	5:Y:104:LEU:HD11	1.57	0.86
6:A:814:NAG:O4	6:A:815:NAG:H1	1.75	0.86
5:L:18:ARG:HD2	5:L:75:ILE:H	1.37	0.85
5:Y:81:GLU:O	5:Y:83:ILE:N	2.08	0.85
1:A:658:VAL:HG21	1:A:691:PHE:HE2	1.44	0.82
5:L:18:ARG:NH1	5:L:21:ILE:H	1.80	0.80
2:C:19:ARG:HG2	2:C:73:THR:HG23	1.65	0.79
1:A:100:MET:HG2	6:A:803:NAG:H4	1.64	0.78
1:B:339:SER:HB2	1:B:342:SER:HB3	1.64	0.78
5:Y:80:GLN:HE22	5:Y:83:ILE:HG13	1.47	0.78
1:B:291:ASN:HD22	1:B:316:HIS:HB2	1.47	0.78
4:H:28:SER:HA	4:H:77:ASN:HD21	1.48	0.76
5:Y:80:GLN:OE1	5:Y:106:ILE:HD11	1.84	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:Y:39:LYS:HG3	5:Y:41:ASP:H	1.51	0.75
1:B:29:THR:N	1:B:37:CYS:HG	1.85	0.75
6:B:715:NAG:O4	6:B:716:NAG:H1	1.87	0.75
5:L:11:LEU:HD12	5:L:12:PRO:HD2	1.66	0.75
5:Y:81:GLU:C	5:Y:83:ILE:H	1.90	0.75
1:B:119:PHE:O	1:B:146:GLN:NE2	2.21	0.73
5:L:85:THR:CG2	5:L:103:LYS:HG3	2.19	0.73
1:A:594:GLY:HA3	1:A:618:GLN:HE21	1.53	0.73
4:X:12:VAL:O	4:X:114:VAL:CG2	2.36	0.73
1:B:227:PHE:HD1	1:B:254:SER:HB3	1.55	0.72
6:B:713:NAG:H83	6:B:713:NAG:H3	1.72	0.71
3:F:17:THR:HG22	3:F:87:SER:HA	1.73	0.71
1:A:473:ARG:HH21	1:A:498:SER:H	1.38	0.71
2:E:48:TYR:CD1	2:E:54:PRO:HD3	2.26	0.70
5:L:85:THR:HG22	5:L:103:LYS:HG3	1.73	0.70
1:B:489:ARG:O	1:B:489:ARG:HD3	1.91	0.70
5:L:66:GLY:HA3	5:L:71:TYR:HA	1.72	0.70
1:A:291:ASN:HD22	1:A:316:HIS:HB2	1.57	0.69
4:H:69:SER:HB3	4:H:82:LYS:HB3	1.73	0.69
5:Y:48:ILE:HG22	5:Y:51:THR:O	1.93	0.69
5:Y:80:GLN:NE2	5:Y:83:ILE:HG13	2.07	0.68
6:A:812:NAG:H3	6:A:812:NAG:H83	1.73	0.68
3:F:34:ALA:HA	3:F:103:SER:HA	1.76	0.68
5:Y:39:LYS:HD2	5:Y:40:PRO:HD2	1.76	0.68
1:B:265:ASN:ND2	6:B:708:NAG:H61	2.09	0.68
2:E:1:ASP:HB3	2:E:91:ASP:OD2	1.94	0.67
1:A:40:LEU:HB2	1:A:42:LEU:HG	1.76	0.66
1:B:76:GLN:HA	1:B:100:MET:HE3	1.78	0.66
1:B:211:GLU:OE2	1:B:213:SER:OG	2.12	0.66
1:A:29:THR:N	1:A:37:CYS:HG	1.95	0.65
1:B:351:PHE:HB3	1:B:378:LEU:HD21	1.79	0.65
1:A:169:GLN:HG3	1:A:170:LEU:HG	1.78	0.65
1:A:689:ARG:HG3	1:A:690:LEU:HD12	1.78	0.65
1:A:268:PHE:HB3	1:A:271:LEU:HD12	1.78	0.64
1:A:211:GLU:OE2	1:A:213:SER:OG	2.16	0.64
5:L:18:ARG:HD2	5:L:75:ILE:N	2.12	0.64
1:B:37:CYS:HB2	1:B:58:LEU:HD23	1.79	0.63
5:Y:80:GLN:NE2	5:Y:80:GLN:HA	2.13	0.63
4:H:16:GLN:HG2	4:H:17:SER:H	1.63	0.62
1:A:473:ARG:HH21	1:A:498:SER:HB3	1.64	0.62
1:A:489:ARG:O	1:A:489:ARG:HD3	2.00	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:17:THR:HG22	3:D:87:SER:HA	1.82	0.62
1:A:521:ILE:HD12	1:A:542:LEU:HD13	1.82	0.62
1:A:688:VAL:HG12	1:A:688:VAL:O	2.00	0.62
1:A:658:VAL:HG21	1:A:691:PHE:CE2	2.32	0.62
2:E:91:ASP:O	2:E:94:ASN:O	2.18	0.61
3:F:64:ALA:C	3:F:65:VAL:O	2.31	0.61
6:A:811:NAG:O1	6:A:811:NAG:O7	2.14	0.61
6:B:716:NAG:O3	7:B:717:BMA:H1	2.00	0.61
3:F:53:ILE:HG22	3:F:61:ASN:HB3	1.80	0.61
1:A:393:LEU:O	1:A:419:ILE:HA	2.01	0.61
1:A:450:GLN:OE1	1:A:453:ARG:NH2	2.34	0.60
1:B:169:GLN:HG3	1:B:170:LEU:HG	1.82	0.60
1:B:508:LEU:HD21	1:B:511:LEU:HD13	1.82	0.60
1:B:566:ILE:HD12	1:B:590:ILE:HD12	1.83	0.60
1:A:591:ILE:HG22	1:A:612:LEU:HD11	1.83	0.60
1:A:227:PHE:HD1	1:A:254:SER:HB3	1.66	0.60
5:L:18:ARG:HE	5:L:21:ILE:HD12	1.67	0.60
1:B:275:ASN:OD1	6:B:710:NAG:O1	2.19	0.59
5:Y:80:GLN:OE1	5:Y:106:ILE:CD1	2.51	0.59
3:D:36:TRP:CH2	3:D:101:ARG:HD2	2.37	0.59
4:H:52:ILE:HD12	4:H:58:ASN:HB3	1.85	0.59
1:A:510:ILE:HG13	1:A:534:ILE:HB	1.84	0.58
1:A:37:CYS:HB2	1:A:58:LEU:HD23	1.85	0.58
4:X:35:TRP:HB2	4:X:52:ILE:HG23	1.85	0.58
1:A:252:ASN:ND2	6:A:806:NAG:O7	2.35	0.58
4:H:67:ARG:HB2	4:H:84:ASN:HB2	1.86	0.58
1:B:32:HIS:O	1:B:32:HIS:ND1	2.33	0.58
4:H:67:ARG:HA	4:H:84:ASN:HD22	1.68	0.58
2:C:23:SER:OG	2:C:69:THR:HG22	2.03	0.58
1:A:500:SER:HB2	1:A:525:MET:HA	1.86	0.58
1:A:378:LEU:O	1:A:407:SER:HB3	2.03	0.58
3:D:38:TRP:CE2	3:D:84:LEU:HB2	2.38	0.58
3:F:101:ARG:NH1	3:F:110:ASP:HB2	2.19	0.57
4:X:114:VAL:HG12	4:X:114:VAL:O	2.02	0.57
2:E:94:ASN:HA	3:F:49:TRP:CZ3	2.38	0.57
4:H:35:TRP:HB2	4:H:52:ILE:HG23	1.85	0.57
6:A:810:NAG:O3	6:A:811:NAG:O5	2.23	0.57
1:A:49:LEU:O	1:A:73:ARG:NH2	2.37	0.57
5:Y:80:GLN:O	5:Y:83:ILE:HG12	2.04	0.57
1:A:651:CYS:HA	1:A:655:ALA:HB2	1.86	0.57
1:B:40:LEU:HB2	1:B:42:LEU:HG	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:598:LEU:H	1:B:620:ASN:HD22	1.51	0.57
1:A:588:LEU:HD21	1:A:591:ILE:HB	1.86	0.57
4:X:91:THR:HG23	4:X:113:THR:HA	1.86	0.57
4:X:18:LEU:HD22	4:X:112:VAL:HG11	1.86	0.56
1:A:336:GLN:HB2	1:A:343:LEU:HD23	1.88	0.56
3:D:13:LYS:O	3:D:16:GLN:HB2	2.05	0.56
5:L:37:GLN:HB2	5:L:47:LEU:HD11	1.87	0.56
5:Y:3:GLN:OE1	5:Y:26:GLY:HA3	2.05	0.56
3:D:79:LYS:HB3	3:D:81:GLN:HG2	1.88	0.56
1:B:683:TYR:HE2	1:B:691:PHE:CE2	2.24	0.56
1:B:473:ARG:NH2	1:B:498:SER:HB3	2.20	0.56
5:L:31:ASN:HA	5:L:71:TYR:CE2	2.41	0.56
1:B:688:VAL:O	1:B:690:LEU:N	2.39	0.55
3:F:28:SER:HB3	3:F:31:SER:HB2	1.88	0.55
2:C:107:LYS:O	2:C:107:LYS:HG3	2.05	0.55
3:D:58:LYS:CD	3:D:59:TRP:H	2.19	0.55
5:L:18:ARG:HH11	5:L:21:ILE:H	1.52	0.55
1:A:546:TRP:HB3	1:A:578:PRO:HD3	1.89	0.55
3:F:13:LYS:O	3:F:16:GLN:HB2	2.07	0.55
6:B:703:NAG:O7	6:B:703:NAG:O1	2.24	0.55
2:C:100:GLY:O	3:D:45:ARG:NH1	2.38	0.55
1:A:473:ARG:HE	1:A:499:PRO:HD2	1.71	0.55
6:B:712:NAG:O7	6:B:712:NAG:O1	2.20	0.55
1:A:563:HIS:O	1:A:565:HIS:ND1	2.38	0.55
1:B:683:TYR:CE2	1:B:691:PHE:CE2	2.94	0.55
3:F:101:ARG:HH12	3:F:110:ASP:HB2	1.72	0.55
5:L:1:ASP:H1	5:L:95:PRO:HD2	1.72	0.55
4:X:33:TYR:HD1	4:X:100:TYR:HB2	1.70	0.55
4:H:28:SER:HA	4:H:77:ASN:ND2	2.19	0.54
6:A:807:NAG:H3	6:A:808:NAG:H1	1.89	0.54
3:F:94:THR:HG23	3:F:119:THR:HA	1.90	0.54
4:H:4:LEU:HD13	4:H:96:CYS:SG	2.47	0.54
1:A:159:LEU:HB2	1:A:181:ASN:HD22	1.72	0.54
1:B:579:VAL:HG13	1:B:602:PRO:HB2	1.89	0.54
4:X:51:TYR:O	4:X:58:ASN:HB2	2.06	0.54
1:A:348:ASP:HB3	1:A:373:ASN:HB2	1.89	0.54
1:A:578:PRO:HB2	1:A:581:VAL:HG13	1.89	0.54
6:A:802:NAG:O1	6:A:802:NAG:O7	2.23	0.54
3:F:40:ARG:NH1	3:F:93:ASP:OD1	2.41	0.54
5:Y:80:GLN:O	5:Y:80:GLN:NE2	2.40	0.54
3:D:23:ALA:HA	3:D:81:GLN:HB3	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:Y:61:ARG:HH11	5:Y:82:ASP:CG	2.11	0.53
1:A:167:GLN:NE2	3:D:105:PRO:O	2.42	0.53
4:H:51:TYR:O	4:H:58:ASN:HB2	2.08	0.53
4:X:87:THR:O	4:X:114:VAL:HG12	2.09	0.53
4:X:99:ALA:HB2	4:X:103:PHE:HA	1.91	0.53
3:D:59:TRP:CE2	3:D:75:PRO:HG3	2.43	0.53
5:Y:80:GLN:NE2	5:Y:80:GLN:CA	2.72	0.53
1:A:643:ARG:NH1	1:A:670:GLU:OE1	2.36	0.53
1:A:654:ILE:O	1:A:658:VAL:HG23	2.08	0.53
1:B:473:ARG:HH21	1:B:499:PRO:HD2	1.73	0.53
5:Y:83:ILE:CD1	5:Y:106:ILE:HG23	2.40	0.52
5:Y:91:GLY:HA2	5:Y:96:TRP:CD1	2.44	0.52
1:A:664:THR:OG1	1:A:666:THR:HG23	2.09	0.52
1:A:543:ALA:HB2	1:A:572:ASN:O	2.09	0.52
1:B:49:LEU:O	1:B:73:ARG:NH2	2.41	0.52
1:A:594:GLY:HA2	1:A:620:ASN:HD21	1.74	0.52
1:A:154:LEU:HB2	1:A:178:LEU:HD23	1.92	0.52
4:H:91:THR:HG23	4:H:113:THR:HA	1.91	0.52
1:A:265:ASN:ND2	6:A:807:NAG:H61	2.25	0.52
1:B:465:TYR:HA	1:B:489:ARG:HD2	1.91	0.52
2:C:94:ASN:HA	3:D:49:TRP:CZ3	2.45	0.52
1:B:521:ILE:HD11	1:B:542:LEU:HD22	1.92	0.52
3:D:94:THR:HG23	3:D:119:THR:HA	1.92	0.52
4:X:37:TRP:CZ3	4:X:96:CYS:HB2	2.45	0.52
1:B:266:THR:O	1:B:269:LEU:HB2	2.10	0.52
3:D:36:TRP:CZ3	3:D:101:ARG:HB2	2.45	0.51
2:E:6:GLN:HB2	2:E:7:PRO:HD2	1.92	0.51
1:A:119:PHE:O	1:A:146:GLN:NE2	2.42	0.51
1:A:357:LEU:HD21	1:A:360:LEU:HB2	1.92	0.51
1:A:611:SER:O	1:A:613:LYS:HG3	2.10	0.51
1:B:623:THR:HG22	1:B:646:PRO:O	2.10	0.51
1:B:99:PRO:O	1:B:124:ASN:ND2	2.44	0.51
5:L:85:THR:HG22	5:L:103:LYS:CG	2.40	0.51
5:L:86:TYR:CE2	5:L:104:LEU:HD11	2.31	0.51
5:L:8:THR:HG21	5:L:20:THR:O	2.10	0.51
5:L:84:ALA:H	5:L:104:LEU:HD12	1.74	0.51
1:A:595:LEU:HD12	1:A:619:LYS:HB2	1.93	0.51
1:A:473:ARG:NH2	1:A:498:SER:HB3	2.24	0.51
1:B:291:ASN:ND2	6:B:711:NAG:H61	2.26	0.51
5:Y:3:GLN:O	5:Y:25:ALA:HA	2.10	0.51
1:A:464:SER:HB3	1:A:488:ARG:HB3	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:719:NAG:O6	7:B:720:BMA:H3	2.11	0.51
3:D:58:LYS:HD3	3:D:59:TRP:H	1.75	0.51
5:Y:83:ILE:HD12	5:Y:106:ILE:HG23	1.92	0.51
5:L:85:THR:HG23	5:L:103:LYS:HG3	1.90	0.51
4:X:39:ARG:HB3	4:X:94:TYR:CE1	2.46	0.51
1:A:568:ASN:HA	1:A:592:ASP:HB3	1.93	0.50
1:B:469:LEU:HD12	1:B:490:VAL:HG11	1.93	0.50
4:X:16:GLN:HG2	4:X:17:SER:H	1.76	0.50
1:A:167:GLN:HE22	3:D:105:PRO:HA	1.76	0.50
1:B:664:THR:OG1	1:B:666:THR:HG23	2.11	0.50
4:X:49:MET:SD	4:X:94:TYR:HE1	2.34	0.50
1:B:526:LEU:HD22	1:B:529:LEU:HD12	1.92	0.50
1:B:602:PRO:HG2	1:B:605:VAL:HB	1.93	0.50
3:F:30:SER:O	3:F:55:LYS:HE3	2.12	0.50
1:A:361:ASN:OD1	1:A:363:GLU:HG2	2.11	0.50
1:B:32:HIS:C	1:B:32:HIS:HD1	2.15	0.50
1:B:336:GLN:HB2	1:B:343:LEU:HD23	1.93	0.50
2:C:58:PRO:HG2	2:C:61:PHE:CE1	2.47	0.50
4:H:99:ALA:HB2	4:H:103:PHE:HA	1.93	0.50
1:B:361:ASN:OD1	1:B:363:GLU:HG2	2.11	0.49
1:A:272:LYS:HD3	1:A:296:TRP:HE3	1.77	0.49
1:B:591:ILE:HG22	1:B:612:LEU:HD11	1.92	0.49
1:B:678:ASN:OD1	1:B:684:HIS:HE1	1.96	0.49
2:E:107:LYS:N	2:E:107:LYS:CD	2.75	0.49
1:B:339:SER:HB2	1:B:342:SER:CB	2.36	0.49
3:D:53:ILE:HG22	3:D:61:ASN:HB3	1.95	0.49
1:A:465:TYR:HD1	1:A:489:ARG:HD2	1.77	0.49
1:B:354:LEU:HB3	1:B:357:LEU:HB2	1.94	0.49
4:X:5:LYS:NZ	4:X:108:GLN:HB2	2.28	0.49
1:B:680:PRO:HG2	1:B:683:TYR:HB2	1.95	0.49
2:E:38:LYS:HB3	2:E:39:PRO:HD2	1.94	0.49
1:A:618:GLN:O	1:A:643:ARG:O	2.31	0.49
1:B:130:LEU:HB2	1:B:154:LEU:HD23	1.94	0.49
1:B:473:ARG:HH22	1:B:498:SER:HB3	1.78	0.48
3:D:52:ILE:HG22	3:D:102:TYR:CZ	2.48	0.48
5:Y:18:ARG:HA	5:Y:75:ILE:O	2.13	0.48
1:A:64:ARG:HG2	1:A:86:THR:HB	1.93	0.48
1:A:688:VAL:O	1:A:688:VAL:CG1	2.61	0.48
2:C:91:ASP:OD2	2:C:92:ASP:N	2.46	0.48
4:X:88:THR:HA	4:X:114:VAL:O	2.13	0.48
1:A:676:LEU:HD23	1:A:685:GLY:HA2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:393:LEU:O	1:B:419:ILE:HA	2.14	0.48
2:C:38:LYS:HG2	2:C:83:ALA:HB2	1.95	0.48
4:H:67:ARG:HD2	4:H:84:ASN:O	2.13	0.48
1:A:179:SER:HB3	1:A:203:GLU:HG3	1.96	0.48
1:A:275:ASN:OD1	6:A:809:NAG:O1	2.30	0.48
4:H:13:ARG:NH1	4:H:116:SER:O	2.46	0.48
1:B:421:LYS:HE3	1:B:423:GLU:HG2	1.96	0.48
4:H:18:LEU:HD22	4:H:112:VAL:HG11	1.95	0.48
4:X:21:THR:HG1	4:X:80:PHE:HD1	1.60	0.48
1:A:316:HIS:HA	1:A:353:TRP:CH2	2.48	0.48
1:B:473:ARG:NH2	1:B:498:SER:H	2.11	0.48
2:E:4:LEU:HD12	2:E:22:CYS:SG	2.54	0.48
1:B:122:CYS:HB3	1:B:125:LEU:HG	1.94	0.48
4:H:64:LEU:HD13	4:H:68:ILE:HD12	1.95	0.48
1:B:460:GLU:OE1	1:B:484:ARG:HD2	2.13	0.48
2:E:32:VAL:H	2:E:50:ASP:HB3	1.79	0.48
4:H:62:PRO:HD2	5:L:95:PRO:HG3	1.96	0.48
1:A:391:THR:OG1	1:A:392:SER:N	2.47	0.48
1:A:130:LEU:HB2	1:A:154:LEU:HD23	1.96	0.47
2:C:10:VAL:HG13	2:C:104:LEU:HD13	1.95	0.47
1:B:543:ALA:HB2	1:B:572:ASN:O	2.14	0.47
4:X:28:SER:OG	4:X:30:THR:HG22	2.15	0.47
4:X:22:CYS:HB2	4:X:37:TRP:CH2	2.49	0.47
1:B:413:ASN:HD22	1:B:437:ASP:HB3	1.78	0.47
1:A:617:LEU:HD13	1:A:642:MET:HE3	1.97	0.47
2:E:92:ASP:HB3	2:E:93:PRO:HD3	1.96	0.47
1:B:268:PHE:HB3	1:B:271:LEU:HD12	1.96	0.47
6:B:715:NAG:O4	6:B:716:NAG:N2	2.48	0.47
3:F:67:VAL:O	3:F:71:ILE:HG22	2.13	0.47
1:B:580:GLU:O	1:B:583:LYS:HB2	2.15	0.47
1:B:578:PRO:HB2	1:B:581:VAL:HG13	1.96	0.47
1:A:146:GLN:HB3	1:A:149:LEU:HB2	1.97	0.47
1:A:34:VAL:HG13	1:A:55:VAL:HB	1.97	0.47
1:A:387:SER:HB2	1:A:413:ASN:OD1	2.13	0.47
1:A:444:GLY:HA2	1:A:468:TYR:O	2.15	0.47
6:A:815:NAG:O3	7:A:816:BMA:H1	2.14	0.47
5:L:55:HIS:HB3	5:L:58:VAL:HG23	1.96	0.47
5:Y:36:TYR:O	5:Y:86:TYR:HA	2.14	0.47
1:B:64:ARG:HG2	1:B:86:THR:HB	1.95	0.47
1:A:610:VAL:HA	1:A:635:ARG:HH21	1.80	0.46
1:B:373:ASN:HA	1:B:403:SER:HB3	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:67:VAL:O	3:D:71:ILE:HG22	2.15	0.46
2:E:90:TYR:HB2	2:E:95:PHE:HA	1.96	0.46
5:L:83:ILE:CG2	5:L:104:LEU:O	2.63	0.46
1:A:239:GLU:O	1:A:243:LEU:HG	2.14	0.46
1:A:279:LEU:HD11	1:A:281:LEU:HD21	1.98	0.46
1:B:497:SER:OG	1:B:499:PRO:O	2.30	0.46
2:C:107:LYS:HB2	2:C:107:LYS:HE3	1.40	0.46
5:Y:86:TYR:HE2	5:Y:104:LEU:HD22	1.79	0.46
1:A:126:THR:HA	1:A:149:LEU:HA	1.98	0.46
1:A:398:ASN:ND2	6:A:812:NAG:H61	2.30	0.46
1:B:337:SER:C	1:B:338:ILE:HG23	2.36	0.46
1:B:398:ASN:ND2	6:B:713:NAG:H61	2.31	0.46
1:B:546:TRP:HB3	1:B:578:PRO:HD3	1.97	0.46
4:X:36:ASN:OD1	4:X:51:TYR:HB3	2.16	0.46
5:Y:80:GLN:O	5:Y:83:ILE:CG1	2.63	0.46
1:A:105:ASN:HA	1:A:129:HIS:HB2	1.97	0.46
2:E:88:SER:HA	2:E:97:VAL:O	2.16	0.46
1:A:301:GLU:HA	1:A:324:VAL:HA	1.97	0.46
1:B:229:ASN:C	1:B:231:VAL:H	2.19	0.46
2:E:107:LYS:HD3	2:E:107:LYS:N	2.31	0.46
1:A:398:ASN:CG	6:A:812:NAG:H61	2.35	0.46
1:A:521:ILE:H	1:A:545:LEU:HD11	1.81	0.46
3:F:13:LYS:HB2	3:F:16:GLN:HG3	1.98	0.46
4:X:52:ILE:HA	4:X:58:ASN:HB3	1.98	0.46
1:A:421:LYS:HE3	1:A:423:GLU:HG2	1.96	0.46
1:A:602:PRO:HG2	1:A:605:VAL:HB	1.97	0.46
1:B:337:SER:O	1:B:338:ILE:HG23	2.16	0.46
2:C:58:PRO:HG2	2:C:61:PHE:CD1	2.51	0.46
3:F:18:LEU:O	3:F:85:GLN:HA	2.16	0.46
1:A:617:LEU:HD13	1:A:642:MET:CE	2.46	0.46
3:F:49:TRP:HZ2	3:F:52:ILE:HG23	1.81	0.46
1:B:593:LEU:HD12	1:B:617:LEU:HG	1.98	0.45
3:D:18:LEU:O	3:D:85:GLN:HA	2.15	0.45
3:D:49:TRP:HZ2	3:D:52:ILE:HG23	1.80	0.45
1:A:609:GLN:HB3	1:A:612:LEU:HB2	1.98	0.45
4:X:91:THR:OG1	4:X:114:VAL:O	2.33	0.45
1:B:386:LEU:HA	1:B:389:SER:OG	2.16	0.45
3:F:58:LYS:HA	3:F:58:LYS:HD2	1.58	0.45
4:H:32:GLY:O	4:H:54:TYR:HB3	2.16	0.45
1:A:316:HIS:CD2	1:A:353:TRP:CZ2	3.05	0.45
1:B:34:VAL:HG13	1:B:55:VAL:HB	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:465:TYR:HA	1:B:489:ARG:CD	2.46	0.45
3:D:34:ALA:HA	3:D:103:SER:HA	1.97	0.45
3:F:4:LEU:HB3	3:F:22:CYS:SG	2.56	0.45
3:F:72:THR:HB	3:F:85:GLN:HB2	1.98	0.45
5:L:16:GLY:HA2	5:L:77:ASN:HA	1.99	0.45
1:B:594:GLY:HA3	1:B:618:GLN:HE21	1.82	0.45
3:F:49:TRP:CE3	3:F:64:ALA:HB2	2.51	0.45
4:X:101:ILE:HG12	5:Y:49:TYR:CD2	2.52	0.45
1:A:318:LEU:HB3	1:A:321:LEU:HD12	1.98	0.45
1:A:469:LEU:HA	1:A:469:LEU:HD23	1.70	0.45
1:B:105:ASN:HA	1:B:129:HIS:HB2	1.99	0.45
3:D:38:TRP:CZ3	3:D:99:CYS:HB3	2.52	0.45
5:Y:35:TRP:CZ3	5:Y:88:CYS:HB3	2.51	0.45
4:H:51:TYR:CE2	4:H:59:ASN:HB3	2.52	0.45
5:L:31:ASN:HA	5:L:71:TYR:HE2	1.82	0.45
5:L:83:ILE:HG23	5:L:104:LEU:HB2	1.99	0.45
4:X:87:THR:O	4:X:114:VAL:CG1	2.64	0.45
1:A:347:ASP:O	1:A:350:SER:OG	2.23	0.45
5:L:89:GLN:HB2	5:L:98:PHE:CD2	2.52	0.44
2:E:18:ALA:HB3	2:E:74:ILE:HB	2.00	0.44
1:A:508:LEU:HD21	1:A:511:LEU:HD13	1.99	0.44
1:B:92:PRO:HG3	1:B:117:LYS:HB3	2.00	0.44
3:F:38:TRP:CE2	3:F:84:LEU:HB2	2.52	0.44
1:A:298:PRO:O	1:A:323:ASN:HB2	2.17	0.44
1:B:589:LYS:O	1:B:612:LEU:HD12	2.18	0.44
2:C:22:CYS:N	2:C:70:ALA:O	2.50	0.44
4:H:83:LEU:HD23	4:H:86:VAL:HG12	1.99	0.44
1:A:277:THR:HA	1:A:300:LEU:HA	1.99	0.44
1:A:465:TYR:HA	1:A:489:ARG:HD2	2.00	0.44
1:B:610:VAL:HA	1:B:635:ARG:HH21	1.82	0.44
1:A:153:ASP:HA	1:A:177:LEU:HB2	2.00	0.44
2:C:82:GLU:HG3	2:C:104:LEU:O	2.18	0.44
3:F:36:TRP:CH2	3:F:101:ARG:HD2	2.53	0.44
2:C:38:LYS:HB3	2:C:39:PRO:HD2	1.98	0.44
1:B:301:GLU:HA	1:B:324:VAL:HA	1.99	0.44
3:D:63:TYR:HB2	3:D:68:LYS:HD2	1.99	0.44
4:H:28:SER:OG	4:H:30:THR:HG22	2.18	0.44
5:L:62:PHE:HB2	5:L:74:THR:O	2.18	0.44
5:Y:48:ILE:CG2	5:Y:51:THR:O	2.63	0.44
6:A:818:NAG:O6	7:A:819:BMA:H3	2.18	0.43
2:C:6:GLN:HB2	2:C:7:PRO:HD2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:100:ALA:HB1	3:F:109:ILE:CG2	2.48	0.43
6:A:802:NAG:C7	6:A:802:NAG:HO1	2.29	0.43
4:H:27:TYR:HE2	4:H:33:TYR:HD2	1.66	0.43
1:A:177:LEU:N	1:A:177:LEU:HD12	2.33	0.43
1:A:498:SER:OG	1:A:499:PRO:HD3	2.18	0.43
1:A:671:LEU:HA	1:A:675:TYR:CD1	2.53	0.43
1:B:316:HIS:HD2	1:B:353:TRP:CZ2	2.36	0.43
1:B:378:LEU:O	1:B:407:SER:HB3	2.17	0.43
4:X:101:ILE:HG12	5:Y:49:TYR:HD2	1.83	0.43
5:Y:33:LEU:HD22	5:Y:71:TYR:CB	2.48	0.43
1:A:257:ASN:HA	1:A:283:TYR:O	2.18	0.43
1:A:40:LEU:HD12	1:A:42:LEU:HD11	1.99	0.43
5:L:7:SER:HB2	5:L:22:SER:OG	2.18	0.43
5:Y:15:LEU:HD12	5:Y:15:LEU:HA	1.82	0.43
1:A:316:HIS:HD2	1:A:353:TRP:CZ2	2.36	0.43
1:A:478:LEU:HA	1:A:478:LEU:HD23	1.63	0.43
1:B:455:LEU:HB3	1:B:458:ILE:HB	2.01	0.43
1:B:516:ASN:HB2	1:B:518:ILE:HG13	2.01	0.43
1:A:654:ILE:HA	1:A:654:ILE:HD12	1.79	0.43
1:A:672:SER:HB3	1:A:689:ARG:NH1	2.33	0.43
1:B:469:LEU:HA	1:B:469:LEU:HD23	1.71	0.43
3:F:64:ALA:O	3:F:65:VAL:C	2.57	0.43
1:B:391:THR:OG1	1:B:392:SER:N	2.51	0.43
1:B:510:ILE:HG13	1:B:534:ILE:HB	2.00	0.43
2:C:43:PRO:HD2	3:D:112:TRP:CE3	2.54	0.43
3:F:49:TRP:CZ2	3:F:52:ILE:HG23	2.53	0.43
4:X:19:SER:HA	4:X:81:LEU:O	2.19	0.43
1:A:413:ASN:CG	6:A:814:NAG:O1	2.57	0.43
1:B:440:LEU:HD23	1:B:465:TYR:CB	2.49	0.43
2:E:7:PRO:O	2:E:102:THR:OG1	2.30	0.43
1:A:526:LEU:HD22	1:A:529:LEU:HD12	2.01	0.43
3:F:12:VAL:O	3:F:120:VAL:HA	2.18	0.43
1:A:630:PHE:HB3	1:A:634:PHE:CE1	2.54	0.42
1:A:141:ASN:HB3	1:A:144:VAL:HB	2.00	0.42
1:B:147:LYS:O	1:B:172:ASN:ND2	2.49	0.42
1:B:66:LEU:HB2	1:B:94:LEU:HD22	1.99	0.42
3:F:103:SER:OG	3:F:110:ASP:OD2	2.17	0.42
5:Y:6:GLN:HE21	5:Y:6:GLN:HB3	1.60	0.42
1:B:277:THR:HA	1:B:300:LEU:HA	2.01	0.42
1:B:233:LEU:HD23	1:B:233:LEU:HA	1.82	0.42
1:B:49:LEU:HB2	1:B:74:TYR:CE1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L:18:ARG:HH12	5:L:21:ILE:H	1.63	0.42
1:A:558:LEU:HA	1:A:561:LEU:HD12	2.01	0.42
2:C:32:VAL:H	2:C:50:ASP:HB3	1.84	0.42
1:A:393:LEU:HD12	1:A:393:LEU:HA	1.69	0.42
1:B:588:LEU:HD21	1:B:591:ILE:HB	2.02	0.42
1:B:680:PRO:O	1:B:681:PRO:C	2.58	0.42
5:L:33:LEU:HD11	5:L:88:CYS:HB2	2.02	0.42
5:Y:2:ILE:HB	5:Y:90:GLN:HE21	1.84	0.42
1:A:331:ARG:HG3	1:A:364:ASP:HB3	2.00	0.42
1:B:617:LEU:N	1:B:617:LEU:HD12	2.35	0.42
1:A:117:LYS:HD2	2:C:28:GLY:O	2.19	0.42
3:F:38:TRP:CG	3:F:84:LEU:HD22	2.54	0.42
1:A:354:LEU:HB3	1:A:357:LEU:HB2	2.02	0.42
1:B:126:THR:HA	1:B:149:LEU:HA	2.01	0.42
1:B:146:GLN:HB3	1:B:149:LEU:HB2	2.02	0.42
5:L:6:GLN:C	5:L:8:THR:H	2.23	0.42
5:Y:4:LEU:HD22	5:Y:23:CYS:SG	2.60	0.42
1:B:680:PRO:HA	1:B:681:PRO:HD3	2.00	0.42
1:A:402:VAL:HG23	1:A:429:TRP:CZ2	2.55	0.41
1:A:465:TYR:HA	1:A:489:ARG:CD	2.50	0.41
1:B:508:LEU:HA	1:B:508:LEU:HD12	1.90	0.41
6:B:714:NAG:O7	6:B:714:NAG:O1	2.35	0.41
1:A:139:LYS:HA	1:A:139:LYS:HD2	1.88	0.41
1:A:212:PHE:CE2	1:A:241:LEU:HB2	2.55	0.41
6:A:817:NAG:H4	6:A:818:NAG:HN2	1.85	0.41
2:C:2:ILE:HD13	2:C:30:TYR:CE1	2.55	0.41
1:A:336:GLN:HB2	1:A:343:LEU:CD2	2.50	0.41
1:A:38:SER:HB3	1:A:57:ASN:OD1	2.20	0.41
1:B:550:ASN:HA	1:B:551:PRO:HD3	1.92	0.41
5:Y:39:LYS:HA	5:Y:84:ALA:HB1	2.03	0.41
1:A:441:ASN:O	1:A:466:ASN:HA	2.20	0.41
5:Y:86:TYR:CE2	5:Y:104:LEU:HD22	2.54	0.41
1:A:201:LYS:HG3	1:A:227:PHE:CE2	2.56	0.41
1:A:331:ARG:CG	1:A:364:ASP:HB3	2.51	0.41
5:Y:22:SER:HA	5:Y:72:SER:HA	2.03	0.41
6:A:807:NAG:C3	6:A:808:NAG:H1	2.49	0.41
1:A:164:LEU:HD12	1:A:194:PHE:HZ	1.85	0.41
1:A:329:LEU:HA	1:A:332:SER:OG	2.21	0.41
1:B:680:PRO:HG2	1:B:683:TYR:CB	2.50	0.41
5:L:62:PHE:HB3	5:L:75:ILE:HA	2.02	0.41
4:X:11:LEU:HD23	4:X:113:THR:OG1	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:92:PRO:HG3	1:A:117:LYS:HB3	2.03	0.41
1:B:513:LEU:HB2	1:B:537:LEU:HD23	2.02	0.41
3:F:101:ARG:NH1	3:F:111:TYR:HD2	2.19	0.41
1:A:566:ILE:HD12	1:A:590:ILE:HD12	2.03	0.41
1:B:200:LYS:HA	1:B:224:PHE:HB2	2.03	0.41
2:C:88:SER:HA	2:C:97:VAL:O	2.21	0.41
5:L:86:TYR:O	5:L:101:GLY:HA2	2.20	0.41
1:A:176:LEU:C	1:A:177:LEU:HD12	2.42	0.41
1:A:468:TYR:CE2	1:A:470:GLN:HB2	2.56	0.41
1:B:473:ARG:HD3	1:B:499:PRO:CD	2.38	0.41
3:D:39:ILE:HG23	3:D:48:GLU:O	2.20	0.41
5:Y:38:GLN:HA	5:Y:43:THR:O	2.20	0.41
1:A:159:LEU:HB2	1:A:181:ASN:ND2	2.36	0.40
1:A:488:ARG:HG3	1:A:514:SER:OG	2.21	0.40
1:B:227:PHE:CD1	1:B:254:SER:HB3	2.46	0.40
1:B:32:HIS:ND1	1:B:32:HIS:C	2.75	0.40
1:B:595:LEU:HD12	1:B:619:LYS:HB2	2.03	0.40
3:F:38:TRP:CZ3	3:F:99:CYS:HB3	2.56	0.40
1:A:537:LEU:HA	1:A:537:LEU:HD23	1.85	0.40
1:A:95:CYS:HB2	1:A:121:PHE:HB2	2.03	0.40
1:B:471:LEU:HA	1:B:471:LEU:HD23	1.92	0.40
1:B:660:TRP:CZ2	1:B:664:THR:HG21	2.56	0.40
2:E:107:LYS:HD2	2:E:107:LYS:HA	1.90	0.40
4:X:33:TYR:CD1	4:X:100:TYR:HB2	2.53	0.40
1:A:460:GLU:OE1	1:A:484:ARG:HD2	2.20	0.40
1:B:242:CYS:HB3	1:B:271:LEU:HG	2.03	0.40
1:B:468:TYR:HA	1:B:490:VAL:O	2.21	0.40
1:B:654:ILE:HA	1:B:654:ILE:HD12	1.89	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [\(i\)](#)

5.3.1 Protein backbone [\(i\)](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	661/671 (98%)	611 (92%)	50 (8%)	0	100	100
1	B	661/671 (98%)	613 (93%)	48 (7%)	0	100	100
2	C	105/107 (98%)	98 (93%)	7 (7%)	0	100	100
2	E	105/107 (98%)	99 (94%)	6 (6%)	0	100	100
3	D	120/127 (94%)	110 (92%)	10 (8%)	0	100	100
3	F	120/127 (94%)	109 (91%)	11 (9%)	0	100	100
4	H	114/121 (94%)	103 (90%)	11 (10%)	0	100	100
4	X	112/121 (93%)	102 (91%)	10 (9%)	0	100	100
5	L	103/107 (96%)	88 (85%)	15 (15%)	0	100	100
5	Y	105/107 (98%)	93 (89%)	10 (10%)	2 (2%)	8	35
All	All	2206/2266 (97%)	2026 (92%)	178 (8%)	2 (0%)	51	82

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	Y	82	ASP
5	Y	106	ILE

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	618/626 (99%)	598 (97%)	20 (3%)	39	67
1	B	618/626 (99%)	596 (96%)	22 (4%)	35	63
2	C	90/90 (100%)	83 (92%)	7 (8%)	12	38
2	E	90/90 (100%)	83 (92%)	7 (8%)	12	38
3	D	107/108 (99%)	103 (96%)	4 (4%)	34	62
3	F	107/108 (99%)	103 (96%)	4 (4%)	34	62
4	H	101/102 (99%)	96 (95%)	5 (5%)	24	55
4	X	99/102 (97%)	95 (96%)	4 (4%)	31	61

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	L	91/93 (98%)	87 (96%)	4 (4%)	28	59
5	Y	93/93 (100%)	89 (96%)	4 (4%)	29	59
All	All	2014/2038 (99%)	1933 (96%)	81 (4%)	31	61

All (81) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	29	THR
1	A	48	ASP
1	A	139	LYS
1	A	169	GLN
1	A	232	GLN
1	A	287	ASN
1	A	303	PHE
1	A	323	ASN
1	A	325	ARG
1	A	338	ILE
1	A	489	ARG
1	A	498	SER
1	A	536	ASP
1	A	542	LEU
1	A	618	GLN
1	A	656	TRP
1	A	679	THR
1	A	686	PHE
1	A	689	ARG
1	A	691	PHE
2	C	1	ASP
2	C	4	LEU
2	C	5	THR
2	C	52	GLU
2	C	53	ARG
2	C	94	ASN
2	C	107	LYS
3	D	45	ARG
3	D	62	ASN
3	D	79	LYS
3	D	121	SER
1	B	48	ASP
1	B	169	GLN
1	B	232	GLN

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Mol	Chain	Res	Type
1	B	251	ARG
1	B	287	ASN
1	B	303	PHE
1	B	323	ASN
1	B	325	ARG
1	B	338	ILE
1	B	339	SER
1	B	340	LEU
1	B	393	LEU
1	B	489	ARG
1	B	492	LEU
1	B	536	ASP
1	B	542	LEU
1	B	618	GLN
1	B	651	CYS
1	B	656	TRP
1	B	678	ASN
1	B	683	TYR
1	B	689	ARG
2	E	5	THR
2	E	48	TYR
2	E	52	GLU
2	E	53	ARG
2	E	54	PRO
2	E	94	ASN
2	E	107	LYS
3	F	58	LYS
3	F	61	ASN
3	F	62	ASN
3	F	79	LYS
4	X	4	LEU
4	X	65	LYS
4	X	81	LEU
4	X	113	THR
5	Y	41	ASP
5	Y	50	TYR
5	Y	80	GLN
5	Y	107	LYS
4	H	3	GLN
4	H	4	LEU
4	H	65	LYS
4	H	81	LEU

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Mol	Chain	Res	Type
4	H	116	SER
5	L	18	ARG
5	L	41	ASP
5	L	90	GLN
5	L	104	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	275	ASN
1	A	291	ASN
1	A	398	ASN
1	B	230	ASN
1	B	291	ASN
1	B	413	ASN
1	B	620	ASN
1	B	678	ASN
1	B	684	HIS
4	X	77	ASN
4	H	77	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

40 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and

the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	NAG	B	711	-	15,15,15	0.23	0	21,21,21	0.68	0
6	NAG	B	702	-	15,15,15	0.73	1 (6%)	21,21,21	0.39	0
6	NAG	B	705	-	15,15,15	0.57	0	21,21,21	0.92	1 (4%)
6	NAG	A	807	-	15,15,15	0.90	1 (6%)	21,21,21	0.71	0
6	NAG	A	808	-	15,15,15	0.84	1 (6%)	21,21,21	0.89	2 (9%)
7	BMA	A	816	-	12,12,12	1.21	0	17,17,17	0.72	0
6	NAG	A	817	-	15,15,15	0.54	0	21,21,21	0.66	0
8	MAN	B	701	-	12,12,12	1.11	0	17,17,17	1.17	1 (5%)
6	NAG	B	709	-	15,15,15	1.00	1 (6%)	21,21,21	0.97	1 (4%)
6	NAG	A	812	-	15,15,15	0.93	1 (6%)	21,21,21	1.16	2 (9%)
6	NAG	B	715	-	15,15,15	0.47	0	21,21,21	0.85	1 (4%)
6	NAG	A	813	-	15,15,15	0.88	1 (6%)	21,21,21	0.56	0
6	NAG	A	803	-	15,15,15	0.41	0	21,21,21	0.52	0
6	NAG	B	710	-	15,15,15	0.29	0	21,21,21	0.34	0
6	NAG	A	815	-	15,15,15	0.47	0	21,21,21	0.74	0
6	NAG	A	818	-	15,15,15	0.70	1 (6%)	21,21,21	1.11	2 (9%)
6	NAG	B	713	-	15,15,15	1.12	2 (13%)	21,21,21	1.22	2 (9%)
6	NAG	A	811	-	15,15,15	0.38	0	21,21,21	0.88	1 (4%)
6	NAG	A	805	-	15,15,15	0.28	0	21,21,21	0.40	0
7	BMA	B	717	-	12,12,12	1.14	2 (16%)	17,17,17	0.78	0
6	NAG	B	712	-	15,15,15	0.48	0	21,21,21	1.19	3 (14%)
6	NAG	A	809	-	15,15,15	0.25	0	21,21,21	0.37	0
6	NAG	B	716	-	15,15,15	0.50	0	21,21,21	0.85	0
6	NAG	A	814	-	15,15,15	0.39	0	21,21,21	0.84	1 (4%)
6	NAG	A	804	-	15,15,15	0.58	0	21,21,21	0.93	1 (4%)
6	NAG	B	718	-	15,15,15	0.52	0	21,21,21	0.58	0
6	NAG	B	719	-	15,15,15	0.70	1 (6%)	21,21,21	1.12	3 (14%)
6	NAG	B	704	-	15,15,15	0.37	0	21,21,21	0.53	0
6	NAG	B	714	-	15,15,15	0.70	1 (6%)	21,21,21	0.70	0
6	NAG	A	801	-	15,15,15	0.78	1 (6%)	21,21,21	0.36	0
6	NAG	B	706	-	15,15,15	0.43	0	21,21,21	0.47	0
7	BMA	A	819	-	12,12,12	1.18	1 (8%)	17,17,17	0.70	0
6	NAG	A	810	-	15,15,15	0.51	0	21,21,21	0.45	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	NAG	B	708	-	15,15,15	0.73	1 (6%)	21,21,21	0.58	0
6	NAG	B	703	-	15,15,15	0.53	0	21,21,21	0.65	0
6	NAG	A	806	-	15,15,15	1.43	2 (13%)	21,21,21	1.31	3 (14%)
6	NAG	B	707	-	15,15,15	1.24	2 (13%)	21,21,21	1.18	2 (9%)
7	BMA	B	720	-	12,12,12	0.96	0	17,17,17	0.77	0
6	NAG	A	802	-	15,15,15	0.31	0	21,21,21	0.61	0
8	MAN	A	820	-	12,12,12	1.12	1 (8%)	17,17,17	1.17	1 (5%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	NAG	B	711	-	-	1/6/26/26	0/1/1/1
6	NAG	B	702	-	-	1/6/26/26	0/1/1/1
6	NAG	B	705	-	-	2/6/26/26	0/1/1/1
6	NAG	A	807	-	-	1/6/26/26	0/1/1/1
6	NAG	A	808	-	-	4/6/26/26	0/1/1/1
7	BMA	A	816	-	-	2/2/22/22	0/1/1/1
6	NAG	A	817	-	-	1/6/26/26	0/1/1/1
8	MAN	B	701	-	-	2/2/22/22	0/1/1/1
6	NAG	B	709	-	-	4/6/26/26	0/1/1/1
6	NAG	A	812	-	-	4/6/26/26	0/1/1/1
6	NAG	B	715	-	-	0/6/26/26	0/1/1/1
6	NAG	A	813	-	-	2/6/26/26	0/1/1/1
6	NAG	A	803	-	-	2/6/26/26	0/1/1/1
6	NAG	B	710	-	-	2/6/26/26	0/1/1/1
6	NAG	A	815	-	-	2/6/26/26	0/1/1/1
6	NAG	A	818	-	-	4/6/26/26	0/1/1/1
6	NAG	B	713	-	-	4/6/26/26	0/1/1/1
6	NAG	A	811	-	-	3/6/26/26	0/1/1/1
6	NAG	A	805	-	-	2/6/26/26	0/1/1/1
7	BMA	B	717	-	-	2/2/22/22	0/1/1/1
6	NAG	B	712	-	-	3/6/26/26	0/1/1/1
6	NAG	A	809	-	-	2/6/26/26	0/1/1/1
6	NAG	B	716	-	-	2/6/26/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	NAG	A	814	-	-	0/6/26/26	0/1/1/1
6	NAG	A	804	-	-	2/6/26/26	0/1/1/1
6	NAG	B	718	-	-	2/6/26/26	0/1/1/1
6	NAG	B	719	-	-	4/6/26/26	0/1/1/1
6	NAG	B	704	-	-	3/6/26/26	0/1/1/1
6	NAG	B	714	-	-	2/6/26/26	0/1/1/1
6	NAG	A	801	-	-	1/6/26/26	0/1/1/1
6	NAG	B	706	-	-	2/6/26/26	0/1/1/1
7	BMA	A	819	-	-	1/2/22/22	0/1/1/1
6	NAG	A	810	-	-	1/6/26/26	0/1/1/1
6	NAG	B	708	-	-	1/6/26/26	0/1/1/1
6	NAG	B	703	-	-	2/6/26/26	0/1/1/1
6	NAG	A	806	-	-	3/6/26/26	0/1/1/1
6	NAG	B	707	-	-	2/6/26/26	0/1/1/1
7	BMA	B	720	-	-	1/2/22/22	0/1/1/1
6	NAG	A	802	-	-	4/6/26/26	0/1/1/1
8	MAN	A	820	-	-	2/2/22/22	0/1/1/1

All (21) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	806	NAG	C1-C2	4.69	1.58	1.52
6	B	707	NAG	C1-C2	3.86	1.57	1.52
6	B	709	NAG	C1-C2	3.44	1.57	1.52
6	B	713	NAG	C1-C2	3.29	1.56	1.52
6	A	807	NAG	C1-C2	3.07	1.56	1.52
6	A	812	NAG	C1-C2	3.07	1.56	1.52
6	A	813	NAG	C1-C2	2.90	1.56	1.52
6	A	808	NAG	C1-C2	2.78	1.56	1.52
6	A	801	NAG	C1-C2	2.65	1.56	1.52
6	B	713	NAG	O5-C1	2.54	1.49	1.42
6	A	818	NAG	C1-C2	2.43	1.55	1.52
6	B	714	NAG	C1-C2	2.33	1.55	1.52
6	B	702	NAG	C1-C2	2.29	1.55	1.52
7	A	819	BMA	C4-C5	2.26	1.57	1.53
6	B	707	NAG	C3-C2	2.23	1.57	1.53
6	B	719	NAG	C1-C2	2.20	1.55	1.52
8	A	820	MAN	C4-C3	2.17	1.57	1.52
6	A	806	NAG	C3-C2	2.10	1.57	1.53
7	B	717	BMA	C1-C2	2.04	1.57	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	B	708	NAG	C1-C2	2.04	1.55	1.52
7	B	717	BMA	C3-C2	2.02	1.57	1.52

All (27) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	B	713	NAG	C1-C2-N2	4.32	115.73	110.73
6	B	712	NAG	C1-C2-N2	3.78	115.11	110.73
6	B	707	NAG	C4-C3-C2	3.41	115.33	110.34
6	A	806	NAG	C4-C3-C2	3.24	115.09	110.34
6	A	814	NAG	O1-C1-O5	-3.03	101.29	110.38
6	A	812	NAG	C1-C2-N2	3.03	114.23	110.73
6	B	715	NAG	O1-C1-C2	-2.88	103.23	109.22
6	B	719	NAG	C1-O5-C5	2.61	118.58	113.66
6	A	812	NAG	C2-N2-C7	2.57	129.43	123.18
6	A	818	NAG	C1-O5-C5	2.51	118.40	113.66
6	B	705	NAG	C1-O5-C5	2.48	118.35	113.66
6	A	804	NAG	C1-O5-C5	2.47	118.33	113.66
6	A	806	NAG	C2-N2-C7	2.47	129.19	123.18
6	B	713	NAG	C2-N2-C7	2.47	129.19	123.18
6	A	818	NAG	C3-C4-C5	2.29	114.33	110.24
6	A	806	NAG	C1-C2-C3	2.28	113.65	110.54
8	B	701	MAN	O2-C2-C3	-2.27	105.11	110.35
6	B	712	NAG	C2-N2-C7	2.24	128.63	123.18
6	B	719	NAG	C3-C4-C5	2.20	114.17	110.24
6	B	707	NAG	C1-C2-C3	2.14	113.47	110.54
6	A	808	NAG	C4-C3-C2	2.14	113.48	110.34
6	A	808	NAG	O5-C5-C4	-2.13	105.83	109.69
6	B	709	NAG	C4-C3-C2	2.07	113.37	110.34
8	A	820	MAN	C1-O5-C5	2.05	117.53	113.66
6	B	712	NAG	C1-O5-C5	2.04	117.51	113.66
6	B	719	NAG	O5-C5-C4	2.01	113.35	109.69
6	A	811	NAG	C1-C2-N2	2.01	113.05	110.73

There are no chirality outliers.

All (85) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	811	NAG	C1-C2-N2-C7
6	B	712	NAG	C1-C2-N2-C7
6	A	806	NAG	C1-C2-N2-C7
6	B	707	NAG	C1-C2-N2-C7

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Mol	Chain	Res	Type	Atoms
6	A	818	NAG	C4-C5-C6-O6
6	B	706	NAG	C4-C5-C6-O6
6	B	705	NAG	O5-C5-C6-O6
6	A	815	NAG	O5-C5-C6-O6
6	B	718	NAG	C4-C5-C6-O6
6	B	712	NAG	O5-C5-C6-O6
6	B	719	NAG	C4-C5-C6-O6
6	A	805	NAG	C4-C5-C6-O6
8	B	701	MAN	O5-C5-C6-O6
6	A	803	NAG	O5-C5-C6-O6
6	B	710	NAG	O5-C5-C6-O6
8	A	820	MAN	O5-C5-C6-O6
6	A	809	NAG	O5-C5-C6-O6
6	A	804	NAG	C4-C5-C6-O6
6	A	813	NAG	O5-C5-C6-O6
6	A	804	NAG	O5-C5-C6-O6
6	B	718	NAG	O5-C5-C6-O6
6	A	802	NAG	O5-C5-C6-O6
6	B	710	NAG	C4-C5-C6-O6
6	A	818	NAG	O5-C5-C6-O6
6	B	719	NAG	O5-C5-C6-O6
6	B	706	NAG	O5-C5-C6-O6
6	A	806	NAG	O5-C5-C6-O6
6	A	806	NAG	C4-C5-C6-O6
6	A	805	NAG	O5-C5-C6-O6
6	A	809	NAG	C4-C5-C6-O6
6	A	815	NAG	C4-C5-C6-O6
6	A	802	NAG	C4-C5-C6-O6
6	B	705	NAG	C4-C5-C6-O6
7	A	816	BMA	C4-C5-C6-O6
7	B	717	BMA	C4-C5-C6-O6
6	A	808	NAG	C3-C2-N2-C7
6	A	802	NAG	C3-C2-N2-C7
6	A	813	NAG	C4-C5-C6-O6
6	B	712	NAG	C4-C5-C6-O6
6	A	812	NAG	C8-C7-N2-C2
6	A	812	NAG	O7-C7-N2-C2
6	A	818	NAG	C8-C7-N2-C2
6	A	818	NAG	O7-C7-N2-C2
6	B	713	NAG	C8-C7-N2-C2
6	B	713	NAG	O7-C7-N2-C2
6	B	719	NAG	C8-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
6	B	719	NAG	O7-C7-N2-C2
6	A	803	NAG	C4-C5-C6-O6
7	A	816	BMA	O5-C5-C6-O6
7	B	717	BMA	O5-C5-C6-O6
6	B	709	NAG	C3-C2-N2-C7
6	B	714	NAG	C3-C2-N2-C7
6	B	703	NAG	C3-C2-N2-C7
8	B	701	MAN	C4-C5-C6-O6
6	A	811	NAG	C4-C5-C6-O6
8	A	820	MAN	C4-C5-C6-O6
6	A	817	NAG	O5-C5-C6-O6
6	A	808	NAG	O5-C5-C6-O6
6	A	808	NAG	C4-C5-C6-O6
6	A	810	NAG	O5-C5-C6-O6
6	A	812	NAG	O5-C5-C6-O6
6	B	704	NAG	C4-C5-C6-O6
6	B	704	NAG	O5-C5-C6-O6
6	A	812	NAG	C3-C2-N2-C7
6	B	713	NAG	C3-C2-N2-C7
7	B	720	BMA	O5-C5-C6-O6
6	B	713	NAG	O5-C5-C6-O6
6	B	708	NAG	O5-C5-C6-O6
6	B	702	NAG	O5-C5-C6-O6
6	A	801	NAG	O5-C5-C6-O6
7	A	819	BMA	O5-C5-C6-O6
6	A	807	NAG	O5-C5-C6-O6
6	B	711	NAG	O5-C5-C6-O6
6	B	709	NAG	C4-C5-C6-O6
6	B	703	NAG	C1-C2-N2-C7
6	A	811	NAG	O5-C5-C6-O6
6	B	709	NAG	O5-C5-C6-O6
6	A	808	NAG	C1-C2-N2-C7
6	B	709	NAG	C1-C2-N2-C7
6	B	714	NAG	C1-C2-N2-C7
6	A	802	NAG	C1-C2-N2-C7
6	B	716	NAG	C4-C5-C6-O6
6	B	707	NAG	C3-C2-N2-C7
6	B	704	NAG	C1-C2-N2-C7
6	B	716	NAG	O5-C5-C6-O6

There are no ring outliers.

28 monomers are involved in 31 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	B	711	NAG	1	0
6	A	807	NAG	3	0
6	A	808	NAG	2	0
7	A	816	BMA	1	0
6	A	817	NAG	1	0
6	A	812	NAG	3	0
6	B	715	NAG	2	0
6	A	803	NAG	1	0
6	B	710	NAG	1	0
6	A	815	NAG	2	0
6	A	818	NAG	2	0
6	B	713	NAG	2	0
6	A	811	NAG	2	0
7	B	717	BMA	1	0
6	B	712	NAG	1	0
6	A	809	NAG	1	0
6	B	716	NAG	3	0
6	A	814	NAG	2	0
6	B	719	NAG	1	0
6	B	704	NAG	1	0
6	B	714	NAG	1	0
7	A	819	BMA	1	0
6	A	810	NAG	1	0
6	B	708	NAG	1	0
6	B	703	NAG	1	0
6	A	806	NAG	1	0
7	B	720	BMA	1	0
6	A	802	NAG	2	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data i

6.1 Protein, DNA and RNA chains i

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	663/671 (98%)	-0.20	4 (0%) 89 90	58, 85, 118, 174	0
1	B	663/671 (98%)	-0.17	5 (0%) 86 86	53, 88, 119, 184	0
2	C	107/107 (100%)	-0.27	0 100 100	61, 83, 109, 136	0
2	E	107/107 (100%)	-0.14	0 100 100	70, 88, 113, 145	0
3	D	122/127 (96%)	-0.09	0 100 100	58, 90, 124, 145	0
3	F	122/127 (96%)	-0.06	2 (1%) 72 69	81, 116, 135, 157	0
4	H	116/121 (95%)	0.98	20 (17%) 1 1	106, 152, 186, 196	0
4	X	114/121 (94%)	0.42	4 (3%) 44 42	90, 141, 186, 204	0
5	L	105/107 (98%)	1.72	34 (32%) 0 0	96, 176, 209, 243	0
5	Y	107/107 (100%)	-0.15	1 (0%) 84 84	65, 109, 136, 157	0
All	All	2226/2266 (98%)	0.01	70 (3%) 49 48	53, 94, 168, 243	0

All (70) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
5	L	10	SER	13.4
5	L	48	ILE	5.8
5	L	46	LEU	5.2
5	L	11	LEU	5.2
5	L	9	SER	5.1
4	X	12	VAL	5.1
4	H	74	THR	5.0
5	L	104	LEU	5.0
1	B	340	LEU	4.9
5	L	74	THR	4.7
4	H	102	GLY	4.7
5	L	62	PHE	4.7
4	H	82	LYS	4.6

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Mol	Chain	Res	Type	RSRZ
1	A	336	GLN	4.4
4	H	19	SER	4.2
4	H	17	SER	4.2
5	L	63	SER	4.2
5	L	33	LEU	4.1
5	L	73	LEU	4.1
5	L	47	LEU	3.9
4	H	84	ASN	3.8
5	L	29	ILE	3.8
5	L	78	LEU	3.8
5	L	80	GLN	3.7
4	H	81	LEU	3.7
4	H	65	LYS	3.7
4	H	100	TYR	3.6
5	L	64	GLY	3.6
5	L	105	GLU	3.5
4	H	57	SER	3.5
5	L	7	SER	3.4
5	L	65	SER	3.4
5	L	75	ILE	3.4
4	H	66	GLY	3.4
4	H	67	ARG	3.3
1	A	337	SER	3.2
5	L	35	TRP	3.1
5	L	56	SER	3.1
4	H	58	ASN	3.1
4	H	83	LEU	3.0
5	L	20	THR	3.0
5	L	72	SER	3.0
4	H	18	LEU	2.9
1	B	523	ASP	2.9
5	L	87	PHE	2.9
5	L	55	HIS	2.8
5	L	17	ASP	2.8
1	A	339	SER	2.8
4	H	33	TYR	2.8
5	L	76	SER	2.7
1	A	338	ILE	2.7
4	H	116	SER	2.6
5	L	90	GLN	2.5
4	H	29	ILE	2.5
5	L	21	ILE	2.4

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Mol	Chain	Res	Type	RSRZ
1	B	494	ASN	2.4
4	X	11	LEU	2.4
5	L	93	THR	2.4
5	L	12	PRO	2.3
4	X	68	ILE	2.3
4	X	77	ASN	2.3
1	B	520	ASN	2.2
4	H	20	LEU	2.2
3	F	1	GLN	2.2
4	H	64	LEU	2.2
1	B	665	HIS	2.2
5	L	86	TYR	2.2
5	Y	104	LEU	2.1
3	F	122	SER	2.0
5	L	37	GLN	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
6	NAG	B	705	15/15	0.34	0.60	180,202,208,209	0
6	NAG	A	813	15/15	0.45	0.41	161,184,192,194	0
6	NAG	A	804	15/15	0.52	0.64	178,194,206,206	0
8	MAN	B	701	12/12	0.54	0.54	192,213,216,217	0
6	NAG	B	706	15/15	0.64	0.51	150,171,187,187	0
8	MAN	A	820	12/12	0.66	0.50	194,200,204,204	0
7	BMA	A	816	12/12	0.67	0.37	165,176,181,184	0
6	NAG	B	719	15/15	0.68	0.46	151,158,173,176	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
6	NAG	B	707	15/15	0.71	0.28	109,133,145,156	0
6	NAG	A	808	15/15	0.72	0.40	135,159,166,174	0
6	NAG	B	712	15/15	0.73	0.29	152,173,179,179	0
7	BMA	B	717	12/12	0.75	0.40	174,186,193,193	0
6	NAG	B	708	15/15	0.75	0.20	116,145,157,162	0
6	NAG	A	805	15/15	0.76	0.55	140,164,172,174	0
6	NAG	B	714	15/15	0.76	0.34	133,159,168,176	0
7	BMA	B	720	12/12	0.77	0.40	157,176,180,180	0
6	NAG	B	710	15/15	0.78	0.19	93,126,154,156	0
7	BMA	A	819	12/12	0.78	0.54	169,179,186,188	0
6	NAG	A	812	15/15	0.78	0.28	117,140,153,154	0
6	NAG	A	811	15/15	0.79	0.23	148,169,183,183	0
6	NAG	A	807	15/15	0.80	0.16	111,128,145,145	0
6	NAG	A	818	15/15	0.80	0.28	143,158,163,165	0
6	NAG	A	803	15/15	0.81	0.21	104,135,142,142	0
6	NAG	A	806	15/15	0.82	0.29	106,129,147,147	0
6	NAG	B	704	15/15	0.83	0.34	129,144,159,162	0
6	NAG	A	802	15/15	0.83	0.21	97,118,126,129	0
6	NAG	B	703	15/15	0.83	0.23	117,133,145,147	0
6	NAG	A	815	15/15	0.84	0.27	117,131,140,143	0
6	NAG	A	809	15/15	0.85	0.17	96,124,135,138	0
6	NAG	B	709	15/15	0.86	0.18	140,160,166,167	0
6	NAG	B	702	15/15	0.86	0.20	104,136,158,159	0
6	NAG	A	801	15/15	0.87	0.14	104,132,144,145	0
6	NAG	B	711	15/15	0.87	0.20	97,107,148,154	0
6	NAG	B	716	15/15	0.88	0.25	110,121,139,154	0
6	NAG	A	810	15/15	0.91	0.16	94,109,143,145	0
6	NAG	A	814	15/15	0.92	0.15	49,66,82,82	0
6	NAG	B	713	15/15	0.92	0.12	91,108,123,131	0
6	NAG	B	718	15/15	0.93	0.24	90,96,99,100	0
6	NAG	A	817	15/15	0.94	0.11	80,92,102,104	0
6	NAG	B	715	15/15	0.96	0.20	58,64,84,87	0

6.5 Other polymers [\(i\)](#)

There are no such residues in this entry.